OCCUPATIONAL INJURY AND DISEASE IN ALBERTA

Exploration
1994 to 1998

Upstream
Oil and Gas

Subsector #1

Alberta
HUMAN RESOURCES
AND EMPLOYMENT

July 1999

Information Services
Alberta Human Resources
and Employment
2nd Floor
10808-99 Avenue
Edmonton, Alberta
T5K 0G5

Phone: (403) 427 - 8531
Fax: (403) 422 - 5070
E-Mail Address:
commshare@lab.gov.ab.ca
Alberta Human Resources
and Employment website:
http://www.gov.ab.ca/hre

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1. Sub-Sector Description

Sub-Sector # 1: Exploration

i. Seismic Geophysical/Mineral Exploration(Industry # 09200)

This industry involves conducting exploration using seismic technology for the purpose of locating formations beneath the earth's surface that may produce usable minerals such as coal, or oil and gas.

The basic procedure used to locate favourable formation beneath the earth's surface is to send shock waves into the ground, and record the patterns on seismic recording equipment.
When exploring for oil and gas, any one of the following three methods may be employed to create the shock waves:

1. Seismographic - Dynamite exploded in a shot hole;
2. Vibraseismic - tractor or truck mounted vibrators which are released to the ground at certain points; and
3. Vacuum Guns - truck mounted piston strikes base plate to send shock waves through the ground

When exploring for minerals, such as coal, shock waves are created by means of small hand tools. Larger equipment is not required as minerals formations are generally not located as deep below the surface as are oil and gas.
Sound waves are received through instrument referred to as geophones. The geophones are in turn wired to recording instruments that log the sound wave patterns. The data processing and analysis of the obtained information, may or may not, be part of the contract.

This industry does not cover shot hole drilling. This is normally subcontracted out to another company classified in industry 09201. Should an employer conduct drilling in conjunction with exploration, an additional industry is required.

Geophysical Exploration, other than seismic, is classified in industry 86405. The key difference is the generation and recording shock waves.

ii. Shot Hole Drilling (Industry # 09201)

The purpose of this industry is to drill bore holes for the purpose of holding explosives used in seismic exploration activities.
Shot hole drilling is performed with a small truck-mounted driller. This is normally a shallow drilling operation, drilling to a depth of 50 to 75 ft. This activity involves drilling only, as an exploration crew is responsible for placing and discharging the explosives. When the explosives are discharged or shot, the vibrations are recorded on a seismograph.

This industry applies specifically to shot hole drilling. Water well drilling is performed in a similar manner but is included under industry 42130.

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20 Victoria Street
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Tel.: (416) 362-5211
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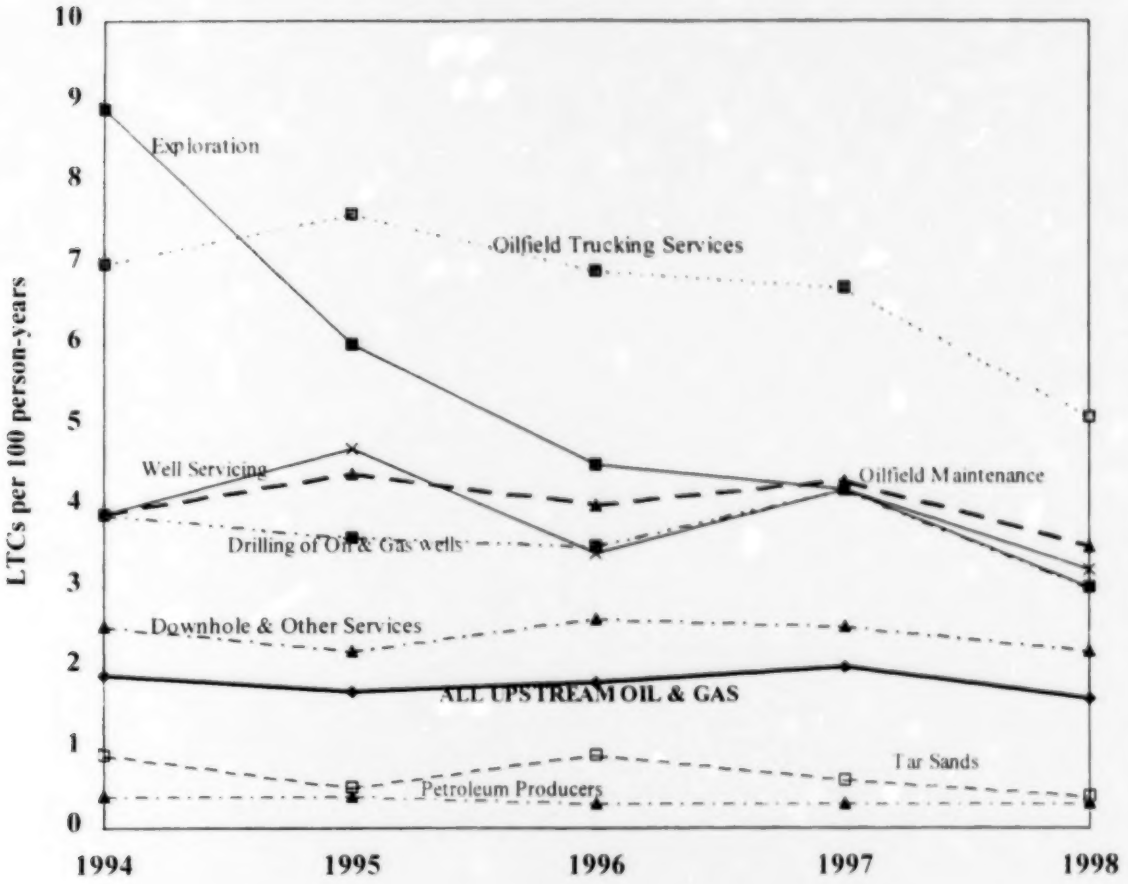
2.

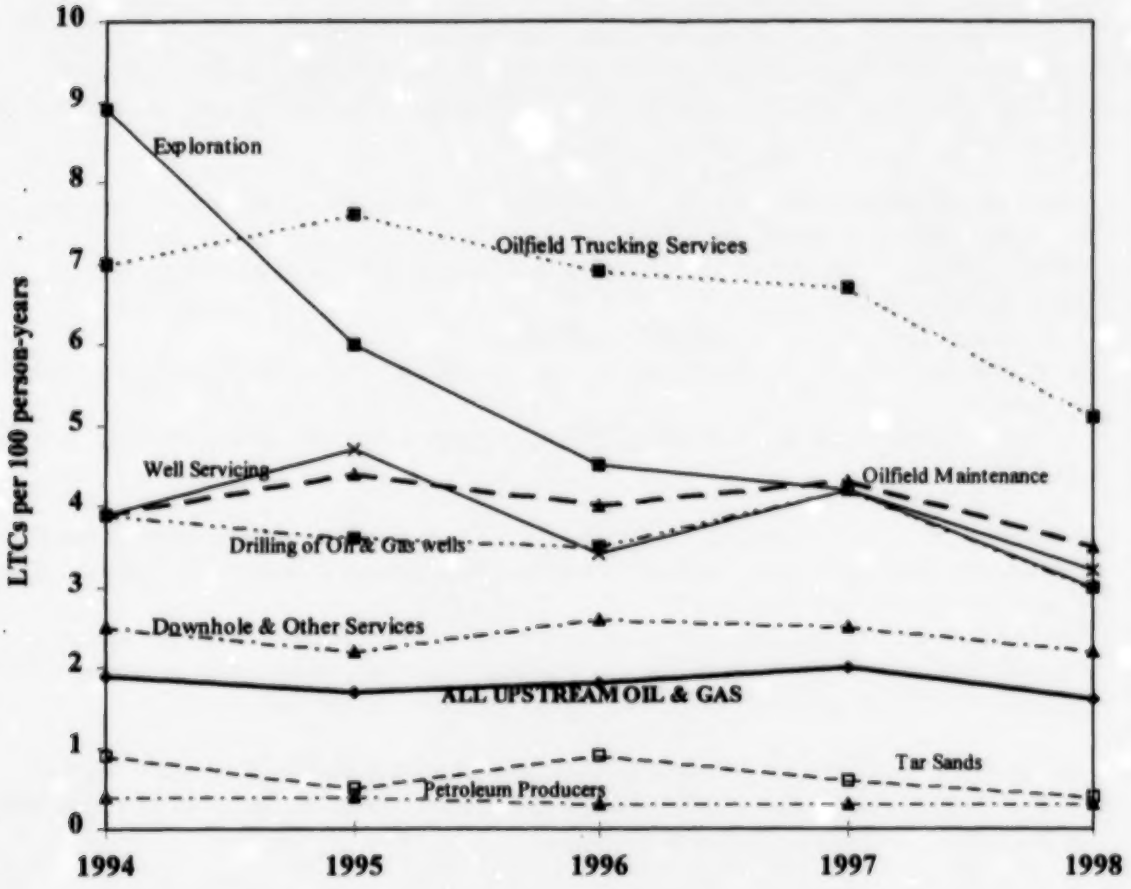
Lost-Time Claim Rates
All Upstream Oil & Gas Subsectors
Alberta 1994-1998



Lost-Time Claim Rate	1994	1995	1996	1997	1998
All Upstream Oil and Gas	1.9	1.7	1.8	2.0	1.6
Exploration	8.9	6.0	4.5	4.2	3.0
Oilfield Maintenance and Construction	3.9	4.4	4.0	4.3	3.5
Well Services with Service Rigs	3.9	4.7	3.4	4.2	3.2
Drilling of Oil and Gas	3.9	3.6	3.5	4.2	3.0
Downhole & Other Oilfield Services	2.5	2.2	2.6	2.5	2.2
Tar Sands	0.9	0.5	0.9	0.6	0.4
Petroleum Producers	0.4	0.4	0.3	0.3	0.3
Oilfield Trucking Services	7.0	7.6	6.9	6.7	5.1

2.

Lost-Time Claim Rates
All Upstream Oil & Gas Subsectors
Alberta 1994-1998



Lost-Time Claim Rate	1994	1995	1996	1997	1998
Exploration	8.9	6.0	4.5	4.2	3.0
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Downhole & Other Oilfield Services	2.5	2.2	2.6	2.5	2.2
Tar Sands	0.9	0.5	0.9	0.6	0.4
Petroleum Producers	0.4	0.4	0.3	0.3	0.3
Oilfield Trucking Services	7.0	7.6	6.9	6.7	5.1

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3. LTC Rates and Duration Rates

Exploration

Year	# of Accounts	Cost	Person Years	Days Lost	Duration Rate	LTCs	LTC Rate
94	195	$1,095,413	2,714	11,392	420	242	8.9
95	217	$1,298,580	2,531	7,349	290	151	6.0
96	222	$808,650	2,605	5,097	196	117	4.5
97	221	$640,472	2,880	5,898	205	122	4.2
98	228	$532,225	2,711	3,967	146	80	3.0

3.1 LTC Rate By Industry

Seismic Survey

Year	# of Accounts	Cost	Person Years	Days Lost	Duration Rate	LTCs	LTC Rate
94	63	$808,905	2,103	8,667	412	205	9.7
95	71	$1,079,552	2,023	4,841	239	120	5.9
96	70	$285,968	2,079	2,766	133	72	3.5
97	64	$471,345	2,215	4,239	191	90	4.1
98	69	$186,034	2,177	2,249	103	49	2.3

Shot Hole Drilling

Year	# of Accounts	Cost	Person Years	Days Lost	Duration Rate	LTCs	LTC Rate
94	132	$286,508	611	2,725	446	37	6.1
95	146	$219,028	507	2,508	494	31	6.1
96	152	$522,683	526	2,331	443	45	8.6
97	157	$169,127	665	1,659	249	32	4.8
98	159	$346,190	534	1,718	322	31	5.8

3.2 LTC Rates by Size of Employer:1998

Size of Employer	# of Accounts	LTCs	Person - Years	LTC Rate
A: 0< PYs <=1	108	3	56	5.3
B: 1 < PYs < 5	60	7	137	5.1
C: 5 <= PYs < 10	15	4	98	4.1
D: 10 <= PYs < 20	9	10	123	8.2
E: 20 <= PYs < 40	10	14	267	5.3
F: 40 <= PYs < 100	9	22	525	4.2
G: PYs >=100	8	20	1,507	1.3
H: Invalid	9	N/A	0	N/A
Total	228	80	2,711	3.0

4. Analysis of the Lost-Time Claims

4.1 Nature of Injury

LOST-TIME CLAIMS ALBERTA: 1994 TO 1998	OCCURRENCE YEAR					Total	
	94	95	96	97	98	Number	Percent
SPRAIN, STRAIN	120	77	45	51	41	334	46.9
FRACTURE & DISLOCATION							
FRACTURE	24	18	12	16	10	80	11.2
DISLOCATION	4	5	3	3	2	17	2.4
SUBTOTAL	28	23	15	19	12	97	13.6
BRUISE, CONTUSION, CRUSHING	27	10	16	10	6	69	9.7
OTHER INJURY	7	3	14	15	5	44	6.2
OTHER DISEASE	7	5	8	9	4	33	4.6
CUT, LACERATION, PUNCTURE	8	3	5	5	3	24	3.4
INFLAMED/IRRITATED JOINTS,ETC.	9	7	2	3	2	23	3.2
MULTIPLE INJURIES	9	8	1	1	1	20	2.8
ALL OTHER NATURES, UNS	27	15	11	9	6	68	9.6
Total	242	151	117	122	80	712	100.0

4.2 Part of Body Affected

LOST-TIME CLAIMS ALBERTA: 1994 TO 1998	OCCURRENCE YEAR					Total	
	94	95	96	97	98	Number	Percent
BACK							
LUMBAR (LOWER BACK)	34	21	4	5	1	65	9.1
OTHER PART	22	15	17	21	18	93	13.1
SUBTOTAL	56	36	21	26	19	158	22.2
LEG(S)							
KNEE	36	26	20	13	9	104	14.6
OTHER PART	9	1	3	3	4	20	2.8
SUBTOTAL	45	27	23	16	13	124	17.4
OTHER TRUNK							
SHOULDER(S)	19	8	5	12	4	48	6.7
CHEST-INCLUDES INTERNAL ORGANS	8	5	5	6	3	27	3.8
HIP(S)-INCUDES PELVIC ORGANS	2	3	4	3	3	15	2.1
OTHER PART	3	1	1	2	1	8	1.1
SUBTOTAL	32	17	15	23	11	98	13.8
ANKLE(S) & FOOT(FEET)-NOT TOES							
ANKLE(S)	21	17	8	8	2	56	7.9
FOOT(FEET)-NOT ANKLES OR TOES	12	5	7	6	5	35	4.9
SUBTOTAL	33	22	15	14	7	91	12.8
OTHER HEAD, NECK							
NECK	13	9	6	3	3	34	4.8
OTHER PART	8	1	1	4	2	16	2.2
SUBTOTAL	21	10	7	7	5	50	7.0
WRIST(S) & HAND(S)-NOT FINGERS							
WRIST(S)	6	5	2	4	5	22	3.1
HAND(S)-NOT WRISTS OR FINGERS	9	5	4	2	1	21	2.9
SUBTOTAL	15	10	6	6	6	43	6.0

(CONTINUED)

Part of Body Affected (continued)

LOST-TIME CLAIMS ALBERTA: 1994 TO 1998	OCCURRENCE YEAR					Total	
	94	95	96	97	98	Number	Percent
FINGER(S)	14	5	4	9	5	37	5.2
ARM(S)(ABOVE WRIST)	7	10	5	3	4	29	4.1
MULTIPLE MAJOR BODY PARTS	7	5	5	6	3	26	3.7
EYE(S)-OPTIC NERVE,VISION	4	4	5	4	3	20	2.8
ALL OTHER PARTS, UNS	8	5	11	8	4	36	5.1
Total	242	151	117	122	80	712	100.0

4.3 Source of Injury

LOST-TIME CLAIMS ALBERTA: 1994 TO 1998	OCCURRENCE YEAR					Total	
	94	95	96	97	98	Number	Percent
VEHICLES							
HIGHWAY VEHICLES (POWERED)	37	22	14	14	10	97	13.6
ALL TERRAIN VEHICLES	8	5	6	10	4	33	4.6
OTHER SOURCE	3	3	6	3	2	17	2.4
SUBTOTAL	48	30	26	27	16	147	20.6
SOURCE-UNS	39	27	25	30	17	138	19.4
BODILY MOTION							
FREE MOVEMENT (EG. RUNNING)	21	9	.	.	.	30	4.2
SLIPPING	9	6	.	.	.	15	2.1
OTHER SOURCE	10	18	20	11	7	66	9.3
SUBTOTAL	40	33	20	11	7	111	15.6
WORKING SURFACES							
GROUND (OUTDOORS)	26	15	10	8	2	61	8.6
OTHER SOURCE	11	6	4	8	6	35	4.9
SUBTOTAL	37	21	14	16	8	96	13.5
PLANTS, TREES, VEGETATION	10	4	2	7	5	28	3.9
BOXES, CONTAINERS	8	8	2	5	4	27	3.8
METAL ITEMS-NEC	10	7	5	4	1	27	3.8
MECHINICAL POWER APPARATUS	6	3	4	2	2	17	2.4
HANDTOOLS-UNPOWERED	5	2	2	2	4	15	2.1
ALL OTHER SOURCES	39	16	17	18	16	106	14.9
Total	242	151	117	122	80	712	100.0

4.4 Type of Event

LOST-TIME CLAIMS ALBERTA: 1994 TO 1998	OCCURRENCE YEAR					Total	
	94	95	96	97	98	Number	Percent
OVEREXERTION							
LIFTING OBJECTS	18	12	4	10	5	49	6.9
PULLING/PUSHING OBJECTS	4	4	4	3	7	22	3.1
OTHER TYPE	12	12	4	10	6	44	6.2
SUBTOTAL	34	28	12	23	18	115	16.2
BODILY REACTION							
REACTION FROM INVOLUNTARY MOTION	21	13	12	4	4	54	7.6
REACTION FROM VOLUNTARY MOTION	19	12	5	6	2	44	6.2
OTHER TYPE	.	8	4	1	3	16	2.2
SUBTOTAL	40	33	21	11	9	114	16.0
VEHICLE INCIDENTS							
HIGHWAY-OVERTURNED VEHICLE	6	6	1	5	4	22	3.1
OTHER TYPE	31	20	21	14	6	92	12.9
SUBTOTAL	37	26	22	19	10	114	16.0
FALL ON SAME LEVEL							
FALL TO WALKWAY, WORKING SURFACE	19	8	7	8	5	47	6.6
FALL ONTO OR AGAINST OBJECTS	10	5	3	3	2	23	3.2
OTHER TYPE	4	1	.	.	.	5	0.7
SUBTOTAL	33	14	10	11	7	75	10.5
FALL FROM ELEVATION	18	10	9	10	3	50	7.0
STRUCK BY	13	8	9	7	9	46	6.5
CAUGHT IN, UNDER RO BETWEEN	16	7	5	5	7	40	5.6
STRUCK AGAINST	13	4	3	4	2	26	3.7
ALL OTHER TYPES, UNS	38	21	26	32	15	132	18.5
Total	242	151	117	122	80	712	100.0

4.5 Duration of Disability

LOST-TIME CLAIMS ALBERTA: 1994 TO 1998	OCCURRENCE YEAR					Total	
	94	95	96	97	98	Number	Percent
01 - 05 DAYS LOST	43	32	14	34	9	132	18.5
06 - 10 DAYS LOST	40	26	18	17	13	114	16.0
11 - 15 DAYS LOST	22	6	5	10	3	46	6.5
16 - 20 DAYS LOST	16	8	8	6	6	44	6.2
21 - 30 DAYS LOST	23	10	18	13	11	75	10.5
31 - 40 DAYS LOST	21	14	9	9	6	59	8.3
41 - 50 DAYS LOST	12	10	6	4	8	40	5.6
51 OR MORE DAYS LOST	63	40	32	26	20	181	25.4
DAYS LOST-UNSPECIFIED, 0	2	5	7	3	4	21	2.9
Total	242	151	117	122	80	712	100.0

5. Characteristics of the Injured Worker

5.1 Occupation of Injured Worker

LOST-TIME CLAIMS ALBERTA: 1994 TO 1998	OCCURRENCE YEAR					Total	
	94	95	96	97	98	Number	Percent
PROFESSIONAL							
ARCHITECTURE & ENGINEERING-NEC	66	35	19	26	15	161	22.6
ARCHITECTURAL & ENGINEERING TECHS	19	2	4	4	.	29	4.1
OTHER OCCUPATION	2	3	4	4	2	15	2.1
SUBTOTAL	87	40	27	34	17	205	28.8
OIL & GAS FIELD, MINING							
ROTARY WELL DRILLING	22	20	22	24	24	112	15.7
OIL & GAS, MINING-NEC	7	8	4	2	1	22	3.1
OTHER OCCUPATION	14	10	5	4	4	37	5.2
SUBTOTAL	43	38	31	30	29	171	24.0
TRANSPORT OPERATORS							
TRUCK DRIVERS	22	13	9	2	5	51	7.2
OTHER OCCUPATION	.	1	1	.	1	3	0.4
SUBTOTAL	22	14	10	2	6	54	7.6
OCCUPATION-NEC							
LABOR-NEC	4	2	2	7	3	18	2.5
OTHER OCCUPATION	4	.	.	.	1	5	0.7
SUBTOTAL	8	2	2	7	4	23	3.2
ALL OTHER OCCUPATIONS, UNS	82	57	47	49	24	259	36.4
Total	242	151	117	122	80	712	100.0

5.2 Age of Injured Worker

LOST-TIME CLAIMS ALBERTA: 1994 TO 1998	OCCURRENCE YEAR					Total	
	94	95	96	97	98	Number	Percent
15-19 YEARS	33	21	11	17	6	88	12.4
20-24 YEARS	77	53	31	35	29	225	31.6
25-34 YEARS	87	51	47	48	26	259	36.4
35-44 YEARS	36	19	22	19	12	108	15.2
45-54 YEARS	5	3	5	2	4	19	2.7
55-64 YEARS	1	3	1	1	3	9	1.3
AGE-UNSPECIFIED	3	1	.	.	.	4	0.6
Total	242	151	117	122	80	712	100.0

5.3 Length of Time Employed

LOST-TIME CLAIMS ALBERTA: 1994 TO 1998	OCCURRENCE YEAR					Total	
	94	95	96	97	98	Number	Percent
A. LESS THAN 1 MONTH	87	54	33	39	27	240	33.7
B. 1 MONTH TO < 6 MONTHS	89	47	27	31	25	219	30.8
C. 6 MONTHS TO < 1 YEAR	12	12	5	5	6	40	5.6
D. 1 YEAR OR MORE	23	20	14	16	7	80	11.2
E. TIME-UNSPECIFIED	31	18	38	31	15	133	18.7
Total	242	151	117	122	80	712	100.0

5.4 Gender of Injured Worker

LOST-TIME CLAIMS ALBERTA: 1994 TO 1998	OCCURRENCE YEAR					Total	
	94	95	96	97	98	Number	Percent
MALE	236	145	114	119	78	692	97.2
FEMALE	4	4	.	2	2	12	1.7
GENDER-UNSPECIFIED	2	2	3	1	.	8	1.1
Total	242	151	117	122	80	712	100.0

6. Number of Employers that Received/Renewed a CoR in 1998

	Certified Employers	Cert. & Uncert. (# of Accounts)	% Certified
Sub-Sector # 1			
Industry 09200-Seismic Geophysical/Mineral Exploration	10	69	
Industry 09201-Shot Hole Drilling	3	159	
Exploration	**13**	**228**	**5.7%**
UPSTREAM OIL & GAS SECTOR	**119**	**7,205**	**1.7%**

7. Cost of Claims, Payroll & Premiums

	Occurrence Year				
	1994	**1995**	**1996**	**1997**	**1998**
Transaction Year					
1994	$981,922				
1995	$288,007	$1,235,119			
1996	$228,829	$348,502	$721,136		
1997	$259,273	$131,278	$213,910	$602,086	
1998	$39,931	$97,694	$233,592	$194,082	$483,556
Total Cost	$1,797,962	$1,812,593	$1,168,638	$796,168	$483,556
Total Payroll	$69,825,528	$66,526,253	$65,681,303	$81,404,729	$79,295,700
Total Premiums	$4,843,296	$3,905,176	$2,812,409	$3,738,680	$2,270,861

The above cost for claims, payroll and premiums are for the five year period 1994-1998. The data is as at July, 1999.

The claim cost mount reflect paid costs on claims which have occurred in the five year period. These paid cost are tracked by year of occurrence and year that the cost were transacted.

The payroll have been totaled for each year. The premium is the total of employer's premiums paid for each year.

8. Occupational Fatalities

An occupational fatality is the death of a worker which results from a work-related incident or exposure. Alberta Labour classifies occupational fatalities into three general types: motor vehicle incident, workplace incident and occupational diseases. Each is described in detail below.

Motor Vehicle Incident

Motor vehicle incident typically involve highway vehicles operating on public roads in which the fatally injured worker was either the driver or a passenger. This category also includes fatalities involving air plane crashes, train crashes, helicopter crashes. etc.

Workplace Incident

Fatal workplace incidents consists of cases in which the worker dies at a work site, or as a result of injuries sustained at a work site. It is this type of fatality that Alberta Labour may be responsible for investigating.

Occupational Diseases

Occupational disease fatalities consist mostly of recognized occupational disease, that is, disease known to be primarily or exclusively work-related (e.g. asbestosis, black lung disease). Occupational diseases are frequently diagnosed many years after the initial or crucial exposure to the toxic substance, and in such cases it is very difficult to determine when the fatal exposure occurred. Thus, the occupational disease category, should not be interpreted to reflect present work site hazardous conditions or exposures.

Each year the Workers' Compensation Board (WCB) accepts some occupational fatality claims for compensation. Claims accepted in a particular year does not imply the fatalities occurred in that year.

Description of Exploration Fatalities
Accepted by the WCB
Alberta, 1992-1998

Year	Occupational Disease		Motor Vehicle incident		Workplace Incident		Total	
	N	%	N	%	N	%	N	%
1992	0	0	0	0.0	0	0.0	0	100
1993	0	0	1	100.0	0	0.0	1	100
1994	0	0	0	0.0	1	100.0	1	100
1995	0	0	5	100.0	0	0	5	100
1996	0	0	2	100.0	0	0	2	100
1997	0	0	1	100.0	0	0.0	1	100
1998	0	0	1	100.0	0	0.0	1	100
Total	0	0.0	10	90.9	1	9.1	11	100

9. OHS Investigated Occupational Fatalities 1987-1998

YEAR:	1987	AGE:	36
OCCUPATION:	Driller	FILE:	0561
INDUSTRY:	Shot Hole Drilling Operations		
EXPERIENCE:	15 years		

DESCRIPTION: Two workers were operating a leased top drive auger-type seismic rig (on rubber) on a petroleum company lease. The two were drilling shot holes when the equipment experienced difficulties. The driller stopped the equipment, left the controls and walked to the rotary table. The left side of the rotary table was raised about 450 mm, but the right side, which should have been at the same level, was raised approximately 150 mm higher. The driller placed his head sideways under the rotary table in an attempt to determine the problem. The rotary table, which was not secured by safety chains, dislodged and fell onto the driller's head, causing fatal injuries.

YEAR:	1988	AGE:	31
OCCUPATION:	Driller	FILE:	0599
INDUSTRY:	Seismic Operations		
EXPERIENCE:	6 seasons		

DESCRIPTION: A seismic company was involved in the drilling and loading (with explosives) of holes in a newly cleared seismic line.Two workers operating a Gardner Denver seismic rig, drilled seven holes without any incident. Before drilling the eighth hole, the workers changed the hydraulic break-out unit on the rotary table and replaced it with a manual system referred to as the "J-bowl". Following a short break, the two workers proceeded to stab a new stem into the kelly pin. It was at this time, that the driller got his right hand caught in the J-bowl assembly. The driller was tangled up in the drill stem and thrown 4.6 metres to his death.

YEAR:	1989	AGE:	37
OCCUPATION:	Truck Driver	FILE:	0636
INDUSTRY:	Shot Hole Drilling Operations		
EXPERIENCE:	17 years		

DESCRIPTION: A seismic drilling company's truck driver was fatally injured when the Nodwell all-terrain vehicle he was loading on to a low-boy slipped off the deck and pinned him under the capsized machine. The deceased was in the cab operating the Nodwell's steering controls with the door open while it was being winched on to the low-boy's deck by another truck driver. The deceased was either thrown from the Nodwell's cab on impact, or attempted to jump free, but was pinned by the top frame of the doorway across his back with his face down outside the unit.

There were no OHS Investigated fatalities for the period 1993-1998

Appendix A: Terms, Definitions, and Formulas

Lost-Time Claim

A lost-time claim (LTC) is a claim for an occupational injury or disease which disables the worker beyond the day of injury. Included are claims for which wages compensation are paid, permanent disability claims, fatalities, and cases in which the injured worker is assigned light duties or other modified work.

Person-Years

Person-year estimates are calculated from wage and payroll data provided by account holders to the WCB. Alberta Labour uses these data to estimate. An average industry wage, and uses the average industry wage and employer payroll data to estimate person-years foe each employer and each industry. One person-year le equivalent to one full-time worker working for one year, and can be assumed to equal 2,000 hours worked.

LTC Rate

The lost-time claim (LTC) rate is calculated by dividing the number of lost-time claims by the person-year estimate, and multiplying the result by 100. The LTC rate represent the probability or risk of disabling injury or disease to a worker during a period of one year's work. Comparisons of LTC rates between industries, or between years, can be used to indicate increases, decreases, or differences in this risk.

$$\text{LTC Rate} = \frac{\text{Number of LTCs X 100}}{\text{Estimated Person-years}}$$

Duration (Days Lost)

The duration of disability is the number of days following the injury or disease for which the worker was disabled, and unable to perform normal work duties. This information is obtained for this report from data on compensation days paid on each claim from WCB. Alberta Labour obtains these data on March 31 of the year following the claim year, and does not update the information, even though many injured workers continue to be disabled beyond this date. As a result, the duration information reported here underestimates the true impact of lost-time injury and disease.

Duration Rate

The duration rate is calculated by dividing the number of work days lost (disability days) by the person-year estimate, and multiplying by 100. The result is expressed as "days lost per 100 person-years worked", and indicates, in part, the economic impact of occupational injury and disease. Duration rates are not recommended as reliable indicators of full economic cost. In addition, readers are warned that duration rates are highly unstable when based on only a few lost-time claims; it is recommended that the duration rate not be calculated based upon fewer than 30 lost-time claims.

$$\text{Duration Rate} = \frac{\text{Disability Days X 100}}{\text{Estimated Person-Years}}$$

WCB Accepted Fatality

An occupational fatality is the death of a worker which result from a work-related incident or exposure and which has been accepted by the WCB for compensation. A fatality is counted in the year it is accepted.

NEC

Means "Not Elsewhere Classified"

UNS

Means "Unspecified"

Appendix B : Upstream Oil and Gas 1998 Industry Codes

Sub-Sector 1: **Exploration**
Industries:
09200~Seismic Geophysical/Mineral Exploration
09201~Shot Hole Drilling

Sub-Sector 2: **Oilfield Maintenance and Construction**
Industries:
06304~Oilfield Construction and/or Maintenance

Sub-Sector 3: **Well Servicing With Service Rigs**
Industries:
09903~Well servicing with Service Rigs including Power Swivels

Sub-Sector 4: **Drilling of Oil and gas Wells**
Industries:
09600~Drilling of Oil & Gas Wells

Sub-Sector 5: **Downhole & Other Oilfield Services**
Industries
06305~Field Production Operators
06306~Vacuum Removal of Waste
09900~Mud Logging
09902~Pressure Cleaning Services
09904~Rathole Drilling and Rig Anchoring
09911~Oilfield Downhole Services
09915~Well Casing Services
09921~Servicing Christmas Trees On Oil Wells
09927~Liquid Waste Treatment & Disposal

Sub-Sector 6: **Tar Sands**
Industries:
06600~Mining & Processing of Bituminous Sand
06601~Research/Development, Oil Sands and Heavy Oil Recovery

Sub-Sector 7: **Oil & Gas Exploration/Development**
Industries:
06300~Oil and Gas Exploration & Development-Upstream Operations

Sub-Sector 8: **Oilfield Trucking Services**
Industries:
50720~Oilfield Trucking Services